How Adolescents Get Their Cigarettes: Implications for Policies on Access and Price

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Keeping adolescents from smoking is a focal issue in tobacco control. To this end, adolescent access laws, which make it illegal to sell cigarettes to minors, and increases in cigarette excise taxes represent seemingly simple, effective, and politically popular policy tools (1,2). Whether either of these measures prevents adolescent smoking, however, depends on their ability to influence adolescents in the early phases of smoking uptake and whether these adolescents actually purchase the cigarettes they smoke. This study presents, to our knowledge, the first examination of cigarette sources, analyzed by adolescents’ smoking experience.

We analyzed data from the 1996 California Tobacco Survey, which used random-digit-dialing methodology and telephone interviews. An adult in each household enumerated all household members, and interviewers obtained verbal parental permission to interview 12- to 17-year-old individuals. Adults may have been present. At the end of the interview, interviewers recorded whether they thought someone was listening to the interview. The response rate was 71.2% (6252 individuals responding of 8778 individuals contacted). Details of the survey methodologies are presented elsewhere (3,4). Analyses were performed by use of the WesVarPC© statistical package (5), which takes into account the sample design in computing 95% confidence intervals and tests of statistical significance (6).

Adolescents who reported that they had smoked one cigarette or more in their lifetime were classified as “ever smokers,” and adolescents who had smoked within the past 30 days were classified as “current smokers.” Adolescents were also asked how many days of the past 30 they smoked and how many cigarettes they smoked on average on the days that they smoked.

Additionally, adolescents were grouped according to their status on the smoking uptake continuum, which considers their previous smoking experience and likelihood of future smoking (4). Adolescents who had smoked at least one cigarette but less than 100 cigarettes at least 30 days before the interview and had a strong commitment to “never smoke” were classified as “early experimenters.” Adolescents who had experimented 30 days or more before the survey and had a weak commitment to never smoke and adolescents who had experimented within the past 30 days but had smoked fewer than 100 cigarettes in their lifetime were designated as advanced experimenters. Finally, adolescents who had smoked 100 cigarettes or more in their lifetime were classified as established smokers.

Only 4.7% ± 2.6% (mean ± 95% confidence interval) of early experimenters and 8.6% ± 2.3% of advanced experimenters reported that they usually buy their own cigarettes, whereas 38.9% ± 5.5% of established smokers reported that they usually buy their own. Additionally, 7.6% ± 3.2% early experimenters and 13.5% ± 2.7% of advanced experimenters said they usually have others buy cigarettes for them, and 42.7% ± 4.7% of established smokers reported that others buy their cigarettes. In contrast, 76.1% ± 5.6% of early experimenters and 73.4% ± 4.0% of advanced experimenters were usually given cigarettes, whereas only 17.2% ± 4.6% of established smokers were usually given cigarettes (Fig. 1).

Analyzing the source of cigarettes by average daily consumption reveals an apparent threshold level of smoking, over which most adolescents purchase cigarettes. Among current smokers, the majority (65.2% ± 5.3%) of those who consumed on average fewer than one cigarette per day usually were given cigarettes (Table 1). For those who smoked one cigarette or more per day, the majority usually bought cigarettes themselves or through intermediaries. Only 3.2% ± 2.5% of those who smoked five cigarettes or more per day were usually given cigarettes.

We calculated an adolescent cigarette generosity ratio as the proportion of cigarettes purchased by an adolescent that are given away to other adolescents. Importantly, we assumed that adolescents who reported that they usually were given cigarettes received them from other adolescents who had bought them, either directly or through an intermediary:

\[
\text{Generosity} = \frac{\text{total consumption} - \text{consumption of buyers}}{\text{total consumption}} = \frac{\text{cigarettes given away}}{\text{total consumption}}
\]

If all cigarettes consumed by adolescents were bought by adolescents, then adolescents who bought the cigarettes themselves or through an intermediary purchased at most 7.24 ± 1.30 packs per...
The majority of adolescent experimenters, them, prevention is moot. For the vast smoked 100 cigarettes or more and can half of adolescent current smokers have classified as current smokers. Nearly 2.9% of adolescent ever smokers can be findings mediaries, are consistent with earlier persons who are 18 years of age or nonbuyers received their cigarettes from substantial proportion of adolescent mate generosity among adolescents if a cigarette away. This ratio may overesti-
mension focuses almost exclusively on access laws and excise taxes, our research pro-
vides justification to shift the public de-
bate toward developing alternative stra-
gies. For example, in light of research that links adolescent smoking to tobacco industry promotional activities (11), limits on cigarette advertising and pro-
motions may be effective. Given that adolescent smoking is generally a rebel-
lious behavior, showing adolescents how they are specifically targeted and manipulated by the tobacco industry may disassociate smoking from rebellion. Finally, since nearly all adolescent es-
stablished smokers want to quit (11), greater emphasis on providing quitting assistance for adolescents may help re-
duce adolescent smoking prevalence.

Our research does not suggest that access laws and excise taxes are wholly ineffective. Although these measures may not prevent early experimentation, more research is necessary to determine whether they can delay or discourage adoles-
cents from becoming established smokers. Such an effect would certainly be consist-
tent with the public health agenda.

**REFERENCES**

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(3) Pierce JP, Cavin SW, Macky C, Rosbrook B, Berry C. Technical report on analytic meth-
ods and approaches used in the 1993 Califor-
nia Tobacco Survey analysis. Sacramento (CA): California Department of Health Ser-
vices; 1994.

ifornia, San Diego; 1998.

(5) Westat, Inc. A User’s Guide to WesVarPC, is less than change for a phone call. For price to serve as an effective deterrent to adolescent smoking, cigarettes must be-
come so expensive that giving one to a friend would represent a significant ex-
penditure—certainly more than $0.20 per cigarette. Substantially higher taxation levels, however, potentially encour-
age black markets for cigarettes (10).

month on average and gave away 0.52 ± 1.30 packs per month—the average con-
sumption reported by adolescent non-
buyers. The cigarette generosity ratio is 0.072. Thus, on average, for every 14 cigare-
ettes smoked by adolescents who usually bought cigarettes, they gave one cigare-
ette away. This ratio may overesti-
mate generosity among adolescents if a substantial proportion of adolescent nonbuyers purchased their cigarettes from persons who are 18 years of age or older.

Our results, which show that approxi-
mately 55% of adolescent current smok-
ers usually purchased their cigarettes themselves or through cooperative inter-
mediaries, are consistent with earlier findings (7,8). However, only 34.4% ± 2.9% of adolescent ever smokers can be classified as current smokers. Nearly half of adolescent current smokers have smoked 100 cigarettes or more and can be classified as established smokers. For them, prevention is moot. For the vast majority of adolescent experimenters, who rely on friends with more smoking experience to supply their cigarettes, access laws likely have little impact.

Similarly, the linkage between in-
creased excise taxes and reduced adolescent smoking appears tenuous, since adolescents who are beginning to smoke typically do not buy their own cigara-
ettes. At the current average price of $2.50 per pack of premium cigarettes in California, a single cigarette would cost about $0.13 (9), a price that is too low to deter sharing among friends. Given our estimate that adolescent cigarette buyers give away at most 0.52 packs per month, adolescents who purchase cigarettes spend no more than an extra $1.25 per month on average to supply cigarettes to their friends. Most likely, adolescents give away their cigarettes sporadically, so that the transfer seems even more inconsequential. Even if excise taxes were raised an additional $1.10 per pack—as proposed in the early tobacco industry settlement discussions—a single cigara-
ette would cost less than $0.20, which

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**Table 1.** Source of cigarettes among “current smokers,” by amount smoked*

<table>
<thead>
<tr>
<th>No. of cigarettes/day</th>
<th>Overall (n = 1,662)</th>
<th>Current smokers (n = 666)</th>
<th>Others buy, % (±95% CI)</th>
<th>Others give, % (±95% CI)</th>
</tr>
</thead>
<tbody>
<tr>
<td>&lt;1 (n = 1262)</td>
<td>14.3 (±6.0)</td>
<td>14.8 (±6.3)</td>
<td>65.2 (±5.3)</td>
<td></td>
</tr>
<tr>
<td>1 to &lt;5 (n = 166)</td>
<td>25.4 (±8.7)</td>
<td>46.6 (±8.5)</td>
<td>29.4 (±7.9)</td>
<td></td>
</tr>
<tr>
<td>5 to &lt;10 (n = 66)</td>
<td>33.9 (±12.2)</td>
<td>57.2 (±13.3)</td>
<td>8.9 (±8.6)</td>
<td></td>
</tr>
<tr>
<td>10 to &lt;15 (n = 45)</td>
<td>51.5 (±16.2)</td>
<td>43.4 (±15.9)</td>
<td>5.2 (±6.3)</td>
<td></td>
</tr>
<tr>
<td>≥15 (n = 61)</td>
<td>71.2 (±13.5)</td>
<td>27.1 (±13.3)</td>
<td>1.6 (±2.3)</td>
<td></td>
</tr>
</tbody>
</table>

*Rows may not sum to 100% due to stealing of cigarettes. Overall, 5.3% of adolescents admitted to taking cigarettes from family or friends, without permission. CI = confidence interval.


NOTES

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